

REMARKS

In response to the Office Action mailed December 27, 2005, Applicant respectfully requests reconsideration.

Claims 1, 3-17 and 19-21 were previously examined, and are currently pending for examination, of which claims 1 and 17 are independent. No claim amendments are made by this Request.

1. Telephone Interviews

Applicant and Applicant's representatives appreciate the courtesies extended by Examiner Pendleton in granting and conducting a telephone interview with Applicant's representative, Daniel P. McLoughlin, in late December, 2005. During this interview, the Examiner contended that all of the claims were obvious based on U.S. Patent No. 5,708,722 (Forgues et al.) in view of U.S. Patent No. 5,771,301 (Fuller). In response, Applicants pointed out several distinguishing features of the claims over this combination of references, including the fact that Forgues dealt primarily with the use of feedback to control the *amplification* of an audio signal, not the *attenuation* of an audio signal.

No agreement was reached during the telephone interview; however, the Office Action mailed on December 27, 2005, did not assert Forgues to reject any of the claims. Accordingly, Applicant concludes that the Examiner eventually agreed with Applicant that claims 1, 3-17 and 19-21 patentably distinguish over the combination of Forgues and Fuller.

Applicant and Applicant's representatives further appreciate the courtesies extended by Examiner Pendleton in granting and conducting a telephone interview with Applicant's representative, Daniel P. McLoughlin, on May 4, 2006. The substance of this telephone interview is fully summarized herein.

2. Prosecution History

As discussed during the May 4 telephone interview, this is at least the ninth substantive Office Action in this case. More particularly, this is the fifth Office Action and the sixth substantive rejection (including the rejection based on Forgues and Fuller discussed during the December 2005

telephone interview) since the last time Applicant has amended the claims. That is, the last substantive amendment of the claims by Applicant occurred on April 22, 2002. Since that time, Applicant has addressed and overcome five separate substantive rejections, the current Office Action representing the sixth substantive rejection.

Further, all of the prior art rejections set forth in the current Office Action assert U.S. Patent No. 5,533,136 (Smith) in rejecting the claims. Smith was the primary reference asserted in several previous Office Actions (May 10, 2000; December 6, 2000; and July 31, 2001), which resulted in Applicant's claim amendments (the last made by Applicant) and arguments in the Amendment filed on November 15, 2001. The next Office Action mailed on January 31, 2002 did not include any prior art rejections that involved Smith as the primary reference. Thus, the prosecution history suggests that the Examiner concluded that the claims as amended on November 15, 2001, which are the same claims currently before the Examiner, patentably distinguish over Smith. Now the Smith reference is once again being asserted as the primary reference in rejecting all of the claims.

Applicants respectfully submit that this course of prosecution has not satisfied the examination goal of clearly articulating any rejection early in the prosecution process so that the Applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity. (MPEP, §706, 700-17 first column). This has resulted in unreasonable cost and delay in the prosecution of this application at the expense of the Applicant.

In view of the foregoing, Applicant requests that a Notice of Allowance be issued if this Request for Reconsideration overcomes the current claim rejections. Further, if the Examiner does not conclude that all of the claims are in condition for allowance, it is requested that the Examiner contact Applicant's representative before issuing another Office Action. Examiner Pendleton graciously agreed to do so during the telephone interview.

3. Claims 1 and 3-16 Patentably Distinguish over Smith in View of APA and Klippe

Claim 1 stands rejection under 35 U.S.C. §103(a) as purportedly being unpatentable over Smith in view of Applicant's Admitted Prior Art (APA) and further in view of U.S. Patent No. 5,528,695 (Klippe). Applicant respectfully traverses this rejection.

3.1 Claim 1 Patentably Distinguishes Over the Asserted Combination

No combination of Smith, APA and Klippel would include all of the limitations of claim 1, in particular, the limitation of “third circuitry for receiving the second audio signal and determining a Root Mean Square (RMS) value of the second audio signal and providing an output signal based upon the RMS signal.” The Office Action asserts that a circuit that produces an RMS value is disclosed in Smith in the form of rectifiers 52 and low pass filters 54 (“the rectifiers 52 and the low pass filters 54 determine a Root Mean Square value.”; Office Action, Page 2, lines 16-17).

Applicants respectfully disagree. As is well known to those of skill in the art, the approximate RMS value of on AC voltage = $0.7 \times$ the amplitude (0.7A) of the AC voltage. Inarguably, the combination of the rectifiers 52 and the low pass filters 54 of Smith do not produce an output signal which is approximately 0.7A of the input audio signal. Rather, each combination of diode 52 and capacitor 54 (e.g., 52a and 54a) produces a DC signal having a *same* voltage level as the input signal. (Col. 5, lines 52-58). The combination of rectifying diode 52a and capacitor 54 is a classic example of a *peak detector* as illustrated and described in “The Art of Electronics”, by Paul Horowitz and Winfield Hill, Second Edition, Page 217 (Horowitz), which was submitted along with Applicant’s previous response filed on October 11, 2005. As described in Horowitz, in such a diode and capacitor configuration, the capacitor (e.g., capacitor 54a) charges to the value at the highest point of the input signal, which is passed by the diode (e.g., diode 52a), and holds that value while the diode is back-biased. That is, the capacitor charges to the peak of the amplitude of the input signal, not approximately 0.7 of the amplitude.

During the telephone interview, the Examiner asserted that the combination of diode 52a and capacitor 54a (see FIG. 2) of Smith is the same as the signal processor 220 shown in FIG. 3 of the present application, which produces the RMS value of signal A2’. As an initial matter, the “third circuitry” limitation recited in claim 1 is not limited to the configuration shown in FIG. 3, which merely provides one illustrative example of a circuit that produces an RMS value of an audio signal. Further, the circuit of FIG. 3 shows a rectifier 300 followed by a low-pass filter 275, neither of which is limited to any particular configuration. Contrary to the contentions of the Examiner, under no configuration would the low-pass filter include only a capacitor like capacitor 54a of Smith. That is, capacitor 54a by itself is not a low-pass filter. Even assuming arguendo that the capacitor

were a low-pass filter, the combination of the diode 52a and the capacitor 54a still would not produce an RMS value of the audio signal received by diode 52a, as explained above.

Thus, it should be clear from the foregoing discussion that Smith does not disclose or suggest the “third circuitry for receiving the second audio signal and determining a Root Mean Square (RMS) value of the second audio signal and providing an output signal based upon the RMS value,” as recited in claim 1.

Further, APA and Klippel fail to remedy the deficiencies of Smith regarding determining an RMS value. Klippel only considers the peak value of the signal (col. 2, lines 36-37). Accordingly, even if Smith, APA and Klippel were combined, the resulting combination would not teach the “third circuitry” recited in claim 1.

3.2 The Combination of References is Improper

The combination of Smith and Klippel is improper because, at the time of the invention, one of skill in the art would not have been motivated to combine Smith and Klippel as suggested in the Office Action. The Office Action concedes that Smith discloses a “feed-forward” circuit, not a feedback circuit, but contends that “it would have been obvious to one of ordinary skill in the art at the time of invention to modify Smith to have the first control signal based on feedback circuitry, specifically, connecting the output of attenuator 80 to the circuitry (signal comparator circuit 50a).” (Page 3, lines 1-10). Applicant respectfully disagrees.

There is no motivation or suggestion to modify the feed-forward circuit of Smith to be a feedback circuit in the manner set forth in the Office Action because doing so would render Smith unsatisfactory for its intended purpose (MPEP §2143; original Eighth Edition, Revision Three, August, 2005). Namely, the circuit of Smith so modified would *cease to operate correctly*, and the modifications required to make it operate correctly would involve considerable fundamental changes to the system, and hence substantial inventiveness.

To modify the circuit in Smith to be in a feedback configuration, the input connections to amplifiers 24a and 24b would need to be moved from the left and right inputs (100, 102) to left and right outputs (200, 202). Thus, amplifiers 24a and 24b would receive the output signals of the attenuators 80, not their input signals. This configuration has significant consequences on system

operation, as will now be explained. Referring to FIGs. 1 and 2 of Smith, which is described in columns 5-7, the circuit of Smith uses a fixed attenuator 80. If a logical “1” is applied to it, then attenuation is applied to the audio signal. If a logical “0” is applied to the attenuator, then no attenuation is applied to the input signal. Thus, if a logical “1” is applied, the output signal will be an attenuated signal of lower amplitude than the input signal, and if a logical “0” is applied, the output signal will be the same as the input signal. As will now be explained, because of this fixed attenuation, the circuit in Smith would oscillate (which Examiner Pendleton referred to as a “hysteresis loop” during the telephone interview) when a logical “1” is applied in a feedback configuration.

When a “normal” broadcast signal is received, no attenuation is applied. Thus, in the feedback configuration, the output signal and thus the feedback signal would be below the reference threshold required for attenuation, and a logical “0” would be applied to the attenuator 80. Thus, the circuit of Smith would operate much in the same way for a normal broadcast signal as it would if in the feed-forward configuration. However, the same cannot be said when a commercial program is received that has an increased signal level.

When a commercial program is received that has an increased signal level, the signal would initially pass through the attenuator 80 with no attenuation because a logical “0” is currently being applied to the attenuator. However, this increased signal level output by the attenuator would be detected by the feedback circuit, which would result in a logical “1” being applied to the attenuator. Applying a logical “1” to the attenuator would result in attenuation being applied to the received signal, resulting in an attenuated output. As a result of this attenuation level, the output signal level will be lower, and the feedback circuit would produce a logical “0”, which would be applied to the attenuator. The application of a logical “0” to the attenuator would result in the input signal--which still has an increased signal level--not being attenuated and being passed through as is. The unattenuated output of the attenuator would result in another logical “1” being output by the feedback circuit, resulting in attenuation once again of the input signal. This toggling between logical “0” and logical “1” and the resulting oscillation of the output signal would occur indefinitely while an input signal having an increased signal level is received by the circuit.

Thus, when a commercial program having an increased signal level is received by the circuit of Smith in the hypothetical feedback configuration, the circuit ceases to operate correctly. Rather than provide an attenuated output in this situation as intended, the output would oscillate between an attenuated and unattenuated state. To modify the system of Smith to operate correctly in such a feedback configuration would require substantial changes and significant inventive activity. Thus, the circuit of Smith modified to be in a feedback configuration would be unsatisfactory for its intended purposes of attenuating signals having a high increased signal level.

During the telephone interview, Examiner Pendleton described the modification of the circuit of Smith to be in a feedback configuration, as opposed to a feed-forward configuration, as being a “subtle” change. However, as explained during the telephone interview and as articulated above, such a change is anything but subtle. Rather, modifying the circuit in this manner would require a complete reworking of the circuit and inventive activity.

Therefore, for at least the reasons set forth above, the combination of Smith, APA and Klippel is improper.

3.3 Conclusion Regarding Claims 1 and 3-16

In view of the foregoing, claim 1 patentably distinguishes over Smith in view of APA in view of Klippel. Accordingly, Applicant respectfully requests that the rejection of claim 1 under §103(a) be withdrawn. Claims 3-16 each depend from claim 1 and are patentable for at least the same reasons. Accordingly, Applicant respectfully requests that the rejection of these claims be withdrawn.

4. Claims 17 and 19-21 Patentably Distinguish Over Smith in View of APA and Klippel

Claim 17 stands rejected under 35 U.S.C. §103(a) as purportedly being unpatentable over Smith in view of APA and further in view of Klippel. Applicant respectfully traverses this rejection.

For reasons set forth above in Section 3, the combination of Smith and Klippel is improper. Further, even if the combination where proper (which it is not), claim 17 patentably distinguishes over such combination. Namely, as should be clear from the discussion of Smith set forth above in Section 3, Smith does not teach or suggest “determining a Root Mean Square (RMS) value of the

second audio signal and providing an output signal that is based upon the RMS value,” as recited in claim 17. Further, Klippel and APA fail to remedy this deficiency of Smith. Thus, even if these three references were combined, the resulting combination would not teach this limitation of claim 17.

In view of the foregoing, claim 17 patentably distinguishes over Smith in view of APA and further in view of Klippel. Accordingly, Applicant respectfully requests that the rejection of claim 17 under §103(a) be withdrawn.

Claims 19-21 each depend from claim 17 and are patentable for at least the same reasons. Accordingly, Applicant respectfully requests that the rejections of these claims be withdrawn.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests the necessary two month extension of time. A check in the amount of \$450.00 is enclosed to cover the extension fee. The Commissioner is hereby authorized to charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

Pascal Mellott, Applicant

By:



Daniel P. McLoughlin, Reg. No. 46,066
Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
Telephone: (617) 646-8000

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